

PCT

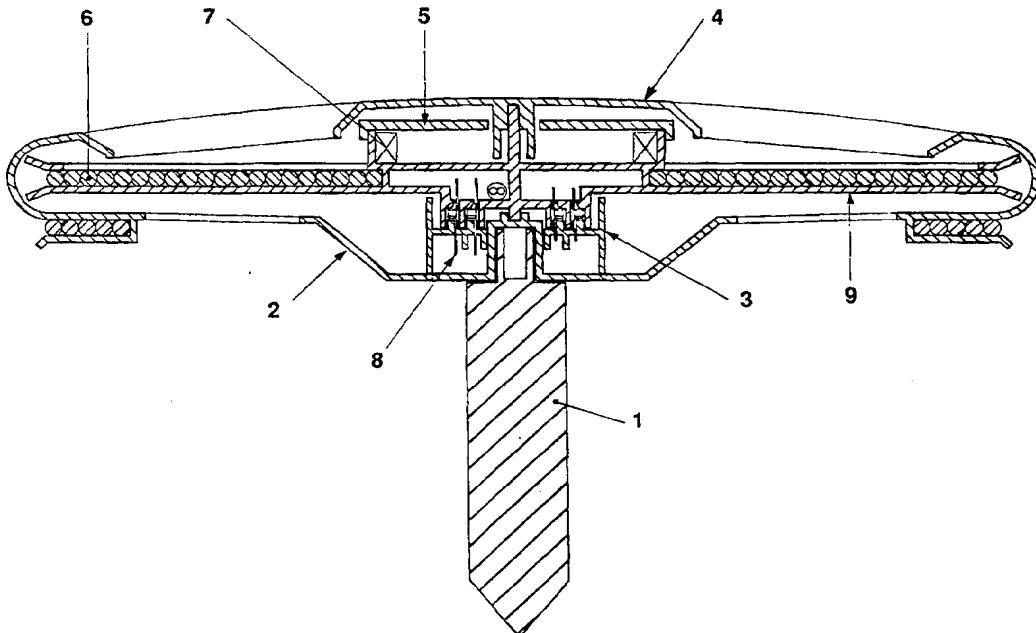
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(54) Title: RECOIL CABLE REEL



(57) Abstract

A recoil cable reel that can be fixed to grass by means of a stake (1) the cable (6) is re-wound on to the drum (9) repeatedly by means of a spring (7), whilst using tools in the garden environment.

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1 "Recoil Cable Reel"

2

3 This invention relates to a recoil cable reel.

4

5 Cable reels are well known in the electrical accessory
6 market, they are used to contain usually 10 amp cable
7 on a drum with a framework around the drum forming a
8 stand and a handle. Usually these products have a
9 handle to wind the electrical cable back onto the drum.
10 Retractable cable reels are used in vacuum cleaners to
11 recover the cable back onto the drum by means of a
12 spring.

13

14 One problem with winding, for example, 15 meters of
15 1 mm square 10 amp cable on to a drum were the cables
16 are repeatedly wrapped over and around each other when
17 the cable is loaded, is that the cable can not be used
18 in its wound state because the cable will over heat due
19 mainly to insufficient ventilation.

20

21 According to the present invention there is provided a
22 recoil cable reel comprising a rotatable drum that will
23 only accept one layer of cable per revolution.

24

1 Preferably, the drum is well ventilated both top and
2 bottom so allowing the heat generated in the cable to
3 be dissipated to the air so allowing the reel to be
4 used when fully wound.

5

6 The cable reel may be used with power tools to enable
7 the user of said tools to move freely about the
8 workshop home or garden.

9

10 The drum may be fixed to a coil spring. The advantage
11 gained by making the drum flat and thin as well as
12 having a very long spring is that the cable is very
13 easy to pull away from the reel at the start point due
14 to the mechanical advantage of the very large diameter
15 drum. At this point any drag on the cable is low; at
16 full extension the cable can still be held comfortably
17 by the hand, ie a maximum force equivalent to about 1
18 to 3 kilos. When the cable is wound back the power in
19 the spring is at a maximum and the drum is at a minimum
20 diameter so giving an easy pull back overcoming the
21 increased friction of the length of cable being pulled
22 over the ground.

23

24 Preferably, the drum is attached to running electrical
25 contacts so supplying power between moving drum and
26 fixed base.

27

28 When used in a garden the cable reel may be secured by
29 means of a stake.

30

31 An embodiment of the invention will now be described,
32 by way of example, with reference to the accompanying
33 drawings in which:

34

35 Fig. 1 shows a cross-section through the device;

1 Fig. 2 shows a perspective view of the recoil cable
2 reel; and

3 Fig. 3 shows an exploded assembly.

4

5 Figs. 1 and 3 show an embodiment of a recoil cable reel
6 according to the present invention. The device
7 comprises a drum 9 which can rotate about a stake 1
8 which would, in use be driven into the ground in order
9 to secure the reel. Cable 6 may be wound onto the drum
10 and the drum is configured so that each rotation of the
11 drum winds or unwinds on a single layer of cable 6 onto
12 the drum 9.

13

14 The drum 9 is mounted upon an electrical connector
15 block 3 which is attached to the stake 1 and includes
16 running electrical contacts 8 so that power can be
17 supplied between the stationary elements of the reel
18 and the drum.

19

20 The drum is mounted in a casing comprising a drum case
21 base 2 which is attached to the stake 1 and protects
22 the drum from contacting the surface upon which the
23 device rests, and a drum case top 4 which also protects
24 the drum 9.

25

26 A coil spring 7 is provided. This provides a force to
27 the drum 9 tending to keep the cable 6 wound on the
28 drum 9, and enabling the cable reel to retract the
29 cable when the tension of the cable 6 not wound onto
30 the drum is sufficiently small. The spring 7 is
31 covered by a spring cover 5 which is provided below the
32 drum case top 4.

33

34 The drum 9 is essentially cylindrical and has a
35 relatively large diameter but a small axial length.

1 The axial length of the drum is of the order of the
2 diameter of the cable to be wound on the drum and is
3 less than twice the diameter of the cable. Thus, when
4 the cable 6 is wound onto the drum 9 a single layer of
5 cable is wound onto the drum 9 with each revolution of
6 the drum 9.

7

8 Figure 2 shows a perspective view of an embodiment of a
9 cable reel according to the present invention.

10

11 The drum 9 and drum case top 4 is shaped so as to allow
12 good ventilation of the cable 6.

13

1 CLAIMS

2

3 1 A recoil cable reel comprising a rotatable drum on
4 which cable may be wound wherein the drum is
5 configured to wind or unwind a single layer of
6 cable with each revolution of said drum.

7

8 2 A recoil cable reel as claimed in Claim 1
9 comprising a stake which can be used to secure
10 said recoil cable reel.

11

12 3 A recoil cable reel as claimed in either of the
13 preceding Claims wherein the drum is provided with
14 perforations or apertures to allow the cable to be
15 ventilated.

16

17 4 A recoil cable reel as claimed in any preceding
18 Claim wherein the cable may have current flowing
19 while said cable is wound on and off the drum.

20

21 5 A recoil cable reel as claimed in any preceding
22 Claim wherein there is a spring to power the
23 recoil action of the drum.

24

25 6 A recoil cable reel as claimed in Claim 5 wherein
26 the spring is a coil spring.

27

28 7 A recoil cable reel as Claimed in any preceding
29 Claim wherein the current is supplied to the drum
30 by sliding contacts.

31

32 8 A recoil cable reel, comprising a drum, that can
33 be secured to the ground by means of a stake,
34 wherein there is provided a spring means to rewind
35 cable onto the drum, thus taking up slack in the

1 cable, whilst allowing the cable to be unwound
2 from the drum by pulling upon the cable.

3

4 9 A recoil cable reel as in Claim 1 or 2 where in
5 the purpose is to stop a user from cutting the
6 cable of a electric garden mower that the reel is
7 attached to by means of the reel holding the cable
8 away from the mower by means of the sprung action
9 of the reel.

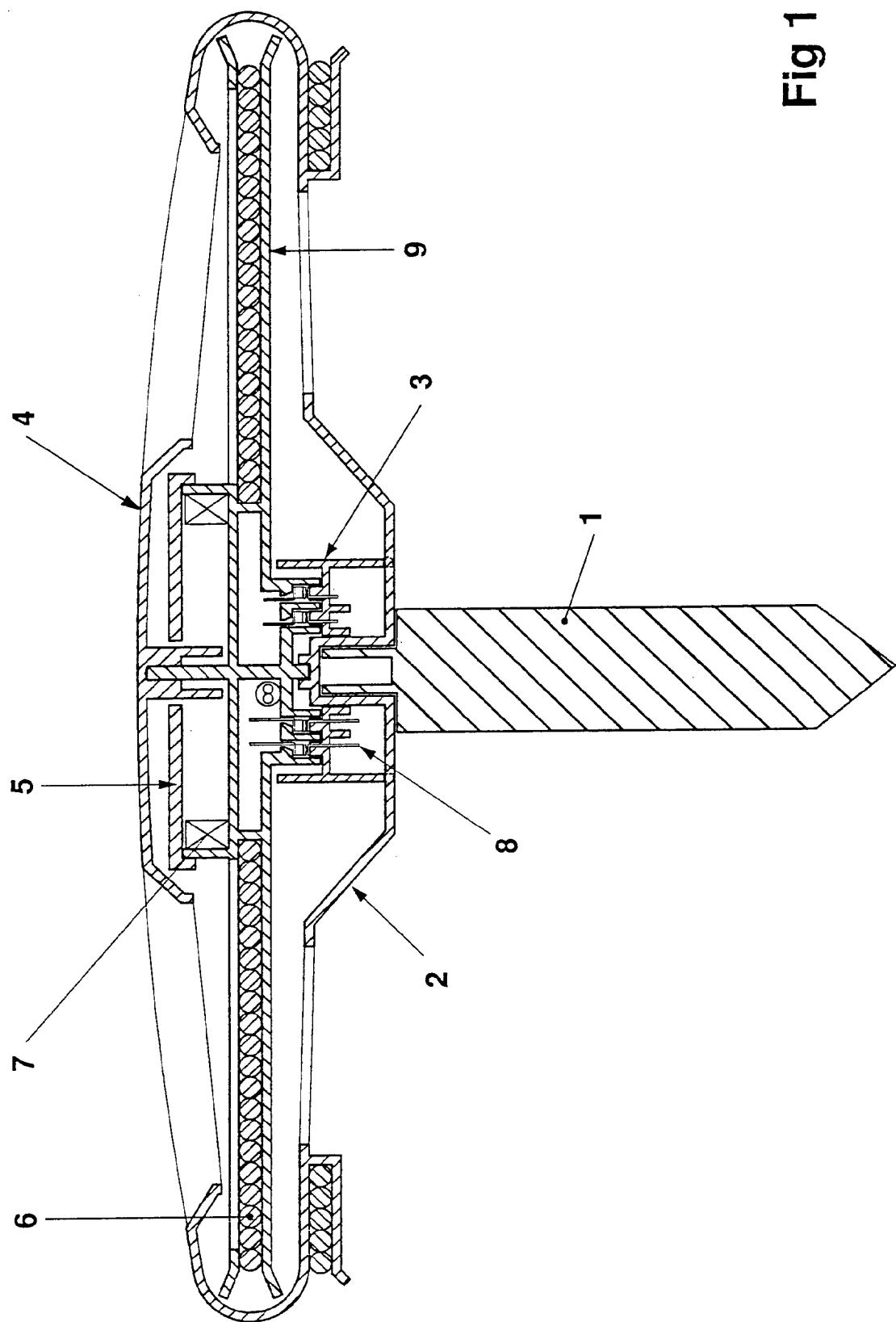
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11 10 A recoil cable reel substantially as described
12 herein with reference to Figs. 1-3 of the
13 accompanying drawings.

14

15

Fig 1



2 / 3

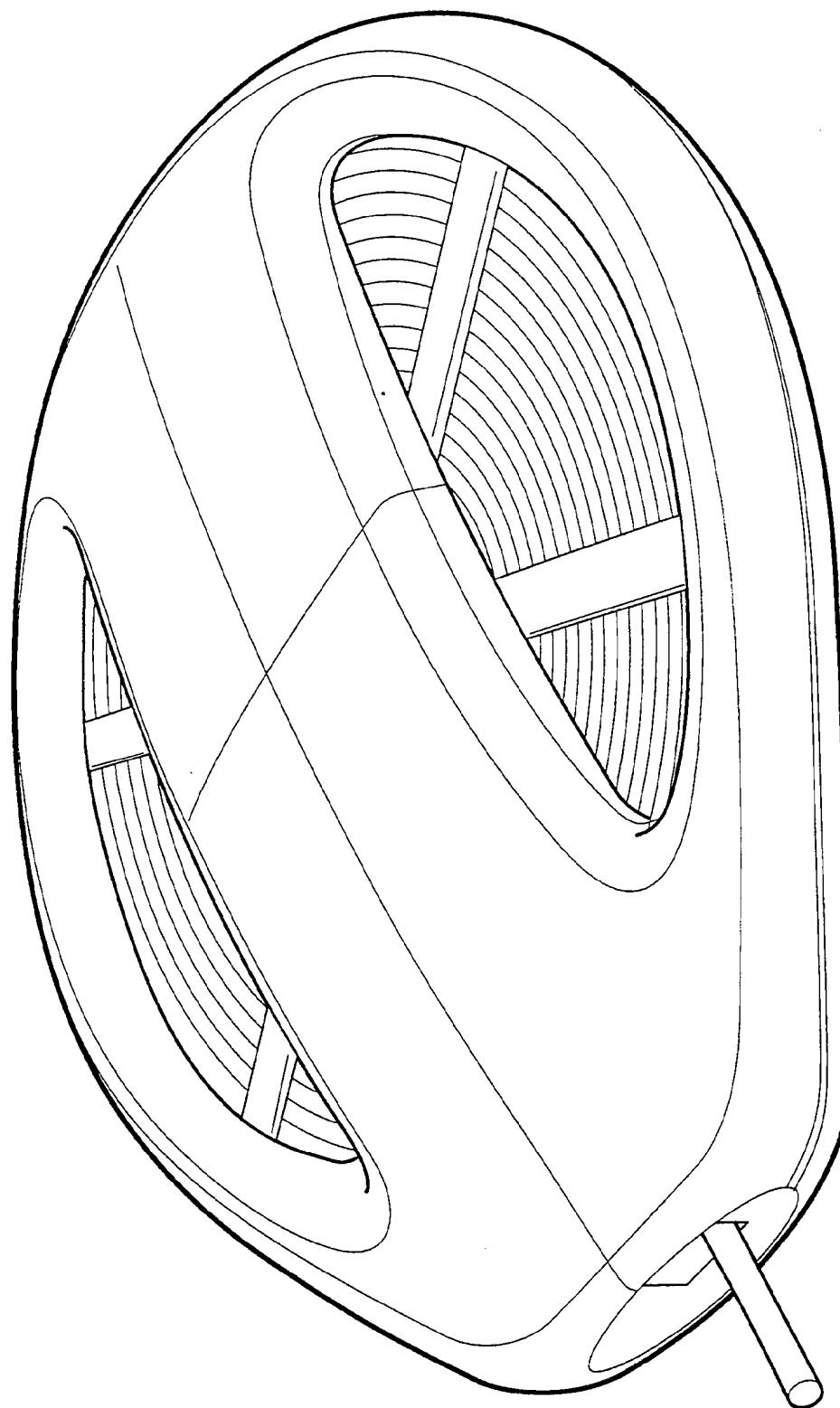


Fig 2

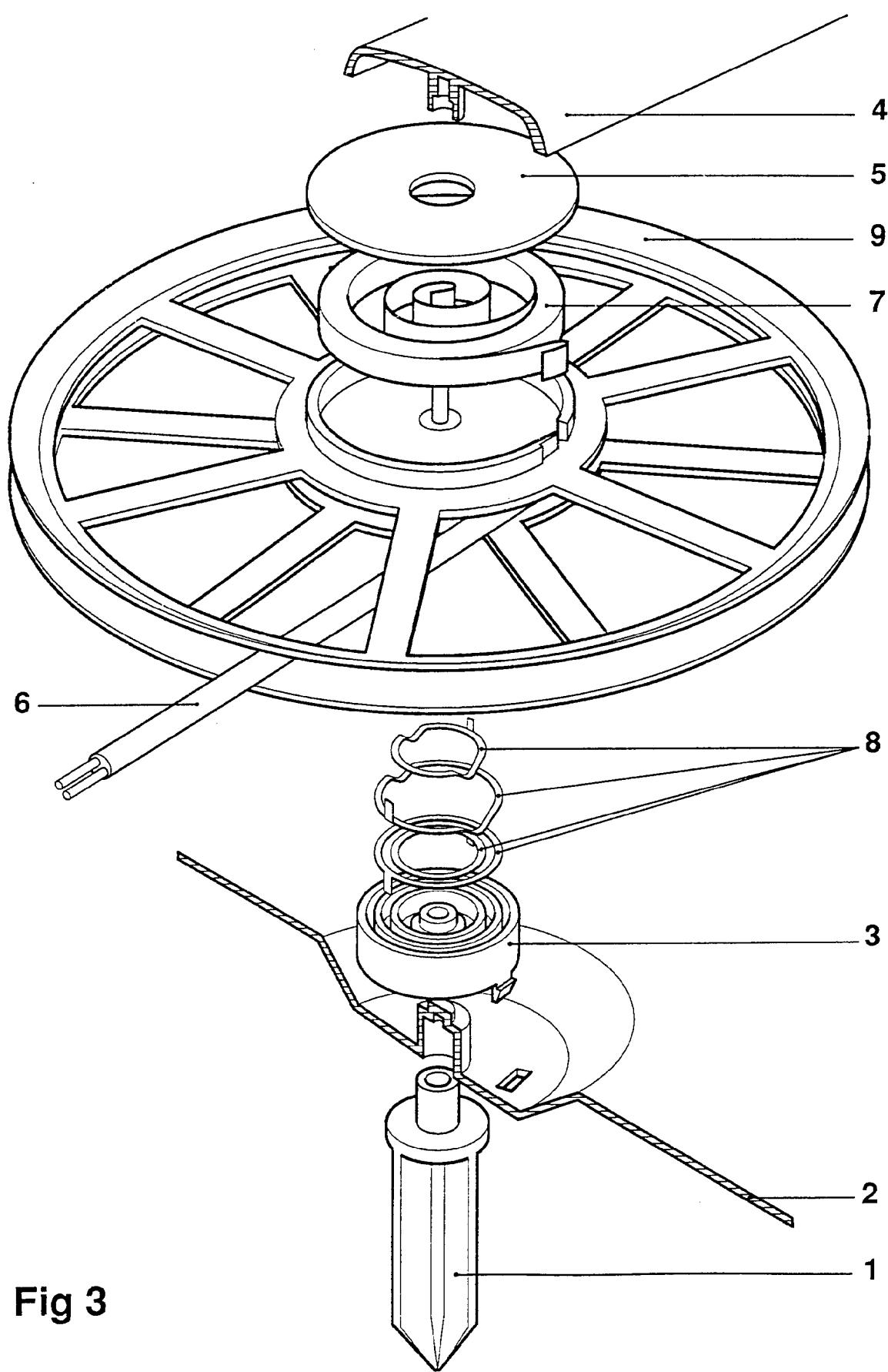


Fig 3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB 94/00438

A. CLASSIFICATION OF SUBJECT MATTER

IPC 5 H02G11/02 B65H75/40

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 5 H02G B65H

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE,A,26 20 924 (DESCO-WERKE SEGER & ANGERMEYER) 24 November 1977 see page 11, line 1 - line 14; figures 3-5 ---	1,3,5,10
A	US,A,2 387 556 (R.J. BAUNACH) 23 October 1945 see page 1, left column, line 40 - page 2, left column, line 25 see page 2, left column, line 48 - line 58; figures 2,5 ---	6,8
X	FR,A,1 386 324 (J. LE GALL) 14 December 1964 see page 3, right column, paragraph 4 - page 4, left column, paragraph 1; figure 8 ---	1,4-7,10
A	---	8

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1 Date of the actual completion of the international search

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24 June 1994

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INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 94/00438

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